





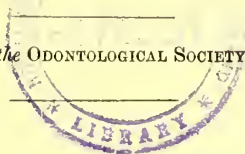
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ON THE TREATMENT  
OF  
CONGENITAL CLEFT PALATE.

BY  
R. RAMSAY, ESQ.

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## ON THE TREATMENT OF CONGENITAL CLEFT PALATE.

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MR. PRESIDENT AND GENTLEMEN,—Previous to commencing my paper this evening, I hope I shall be excused if I make a few introductory remarks. On a former occasion, when my colleague, Dr. Kingsley, read his paper on the same subject before this Society, he was subsequently found fault with by many members because he did not practically explain our method of treatment. In fact, several members of this Society seemed to think that, after listening to Dr. Kingsley on that occasion, they ought to have been able to thoroughly understand the subject in all its practical details, so that upon returning home they could have proceeded forthwith in the production of these artificial vela. Such being the case, I have, in the preparation of my paper, avoided travelling over the same ground as much as possible; and have done my best to make the information that I have to convey to you this evening as thoroughly practical as the subject will admit of.

There is another point which I wish to state.

I wish to have it distinctly understood that my remarks this evening will relate entirely to cases of congenital cleft palate, and I may be allowed to express a hope that any discussion which may follow will be as strictly confined to these congenital cases. For I contend that the dentist who can successfully treat cases of congenital fissure, is fully competent to undertake and successfully treat most cases generated by disease. I make this statement advisedly, and I have no doubt I shall be supported in the assertion by many here present. It must be allowed there are individual cases of cleft palate produced from disease which present mechanical difficulties to be encountered in their treatment equal to congenital: still the operator has this advantage in treating such cases,—the patient, from having once had the power of perfect articulation, would very soon acquire it again when the defect had been artificially restored. This would be the case if even a very imperfect instrument were applied. But in cases of congenital cleft palate, the difficulties are so great that very few dentists, however skilled, will undertake them. There are, however, very few dentists who would not undertake cases generated by disease. These facts speak for themselves, showing the value of Dr. Kingsley's invention.

Having made these few preliminary remarks, I will now proceed to read the paper.

In the first place, I will explain the method of producing these artificial vela. Having done so, I will make a few remarks on the improvement which takes place in mastication and deglutition after the fissure has been thus artificially closed. I will then take up the subject of articulation, and will explain the system I adopt in instructing the patient to articulate, as attention to this is of great importance. In fact, to insure success within any reasonable time, I consider careful tuition absolutely necessary; not that I at all doubt but that perfect articulation would ultimately ensue without any tuition, but in the one case I believe there would be results in a few months which would not have followed for years had the patient been left entirely to himself. It is true many afflicted persons are blessed with kind relations or friends who can assist the operator much, but even these help-mates require some instruction before they can teach with efficiency.

I will here say, *par parenthesis*, in the remarks I make on this subject, I hope it will be understood that I am simply stating my own views and ideas, and if, as I proceed, I should say anything that is not in accordance with the opinions of any gentlemen present, it will give me much pleasure afterwards to discuss the subject.

I will then close the paper by comparing our method of mechanical treatment with the surgical

operations which hitherto have been considered the most successful method for remedying these congenital deformities.

The first step towards producing an artificial velum is to get an impression from which the model is to be made. It is well known that without a correct impression of the defective parts a perfect model cannot be produced, and consequently the apparatus, or instrument, as I call it, will not answer the purpose for which it was intended. For all the parts in question are so delicate and liable to irritation, that unless the instrument be perfectly adapted to the case, the use of it will only cause trouble to the patient, thereby producing no satisfactory results either to him or the operator. These impressions I now always take with plaster of Paris; and my experience leads me to think that no perfect impression can be taken with any other material; that is, if the operator desires to construct such an instrument as the one I am now about to show you.

To those gentlemen who are not familiar with taking impressions of the mouth in plaster of Paris—and of these I am aware there are many now present—I would say, previously to attempting to do this in the manner I am about to describe, much skill ought to be acquired in the use of plaster, by taking plaster of Paris impressions in general practice in all cases when possible,



as there are many little points in the use of plaster, a knowledge of which can only be acquired by actual practice. Two of these are—the proper moment to place the impression-cup in the mouth, and the exact time to remove it. In all cases these points are most important; but in taking impressions of congenital cleft palate, it is absolutely necessary that the operator should have this judgment. Another great point to be able to judge, is the exact quantity of plaster necessary; for if there be too little, the result will be an imperfect impression; and if there be the slightest excess, it will be sure to overflow. In the latter case, if the smallest quantity should drop into the pharynx, or should get into either chamber of the fauces, the operator will not only have his impression destroyed, but get into such trouble, and put his patient to such inconvenience, that both will become nervous; and should this occur, it will take the operator some time before he can regain the confidence of his patient sufficiently to get him to submit to another trial.

I may here remark, that so long as the operations are confined to the superior parts of the mouth, in a little time they may be freely manipulated, even as far back as the posterior wall of the pharynx, and this without the slightest inconvenience to the patient. But the moment anything touches the inferior parts, retching is

certain to ensue. To dentists who are familiar with plaster of Paris in taking impressions, the operation is much simplified; still even to them I would say, be careful in your first attempts; don't try too much, or you will spoil all.

The operator should have two or three interviews with his patient for the object not only of getting an insight into the temperament of the patient, but also that he (the patient) may become familiar with, and have confidence in, the operator to whose treatment he is about to submit. At these meetings it will be advisable to manipulate all the superior parts of the mouth as far back as the posterior wall of the pharynx, that the patient may become accustomed to a foreign body coming in contact with them, or they might be too sensitive to the touch of the plaster. I would also recommend that the impression-cup intended to be used for the first impression should be introduced on each occasion four or five times. By doing this, both the operator and his patient become familiar with its use, and the result will be, when the plaster is put into the cup, it can at once be placed in the desired position with confidence and precision. In taking this, the first impression, an ordinary impression-cup is all that is necessary, as all that is wanted in the first instance is to get an exact model of the mouth without any relation to the fissure. Having procured this, a model is made in the

usual manner. Upon this model must then be made an impression-cup of vulcanized rubber, which must be nicely adapted to the necks of all the teeth. The necessity for this is, that an impression-cup is then obtained which can only, from being guided by the teeth, go into one position. Having arrived thus far, pour the plaster upon it, and place it in the mouth. In doing so, the cup must be passed well back, so that to bring it into the required position it has to be drawn forward. This conveys the plaster well into the anterior nares; and if the necessary quantity be employed, it will be found on removal that quite enough will have spread itself over the superior surface of the palatine bones to show all that is required for the construction of the model. The impression-cup now being in position, the next questions are, when and how it should be removed. The critical period for removing it is when the plaster has so far set as to break easily, and yet for the parts to so retain their shape as to be afterwards readily adjusted. To judge of this matter, constant reference must be had to the plaster from which the portion in use was taken. So soon as it is thought to be fit for removal, this must be done at once, and in a decided manner. The impression will be found to have broken off just at the entrance of the fissure. To allow the part which is left on the superior surface of the palatine bones

to remain a minute or so after the removal of the impression-cup, will in no way incommode the patient; and as the plaster will, of course, have got harder by that time, its removal in a correct form will be more certain. To do this, a pair of long tweezers is required, with which it is carefully pushed back till it can be firmly grasped. Then with a firm and decided motion it can be pressed backwards till the widest part of the fissure is reached, when it may be readily and safely withdrawn. Having got it out of the mouth, it should be thrown into a cup of water, thoroughly cleansed from any mucus that may have adhered to it, and after being carefully joined to the other part—supposing everything to have passed off satisfactorily—the impression will be found complete.

To this I may add, it may happen that a satisfactory impression of the anterior nares and superior surface of the palatine bones has not been procured; or it may have been so fractured in removal as to be rendered useless. Should this be the case, and the impression of the inferior parts be at the same time satisfactory, fresh plaster must be so prepared that it will set rapidly, when it may be applied with the spatula to the parts of which you need a fresh model. This done, the perfect part of the first impression is at once returned and held firmly in position till the new plaster employed has set, when its

removal may be proceeded with as previously described. But as even more judgment and skill are required to do this successfully, it would be advisable for all but practised hands to begin *de novo*. In short, the whole secret, it is evident, in taking these impressions lies in the operator having confidence in himself, and in his being able to inspire his patient with the same feeling.

We now come to the model. A perfect impression having been obtained, such a model as I now exhibit (Fig. 1) can be produced. Upon this

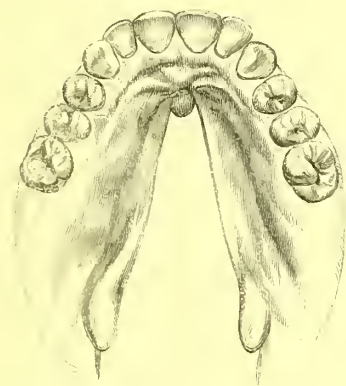


FIG. 1.

a pattern of an artificial velum is constructed, from which, again, one of hard rubber has to be made. From this hard pattern a plaster-of-Paris mould has to be formed in sections, similar to the one presented. But, to admit of the

artificial velum being duplicated for each case, when required, it is necessary to cast a metallic mould similar to the one I here also produce. This metallic mould once perfected, any number of instruments can readily be produced.

I will now take another portion of the subject, viz., mastication and deglutition. Persons who are afflicted with congenital cleft palate cannot, so long as the cleft is left open, properly masticate their food. They have no means of knowing when it is thoroughly masticated, or in a fit state to be passed into the alimentary organs. In fact, to enable them to get their food within reach of the constrictor muscles, so that it may be grasped by them and thrown into the pharynx, they have, after every other mouthful or so, to imbibe some liquid to assist them.

It is well known that, in the process of mastication, the food is constantly being tested, as it were, in regard to its being thoroughly masticated, by being pressed against the roof of the mouth, and this is naturally done that its proper condition for passing down the throat may be ascertained. But if there is no roof to the mouth, this power of testing the food cannot exist, and the wonder is how persons so unfortunately situated can masticate their food at all, and particularly continue their meals without frequent choking.



Another important point here is, I find, that many of my patients were, previously to the cleft being closed, most inordinate eaters, while the food they took seemed to do them no good. In this general remark I do not go beyond the patients who have the cleft extending through the palatine bones; for when the soft palate only is cleft, there is still the hard palate to appeal to. But even in their case there is a vast improvement in their powers of mastication and deglutition.

In examining the mouth of a patient, some time even after he has partaken of food without the help of the instrument, large lumps of unmasticated food will be found lodged in the fissure and around the base of the tongue, having lost the way seemingly to the passage of the throat. With the instrument in position no such lodgment takes place; the mouth also is free from anything of the kind; which shows that the powers of mastication and deglutition are much improved. As proof of this, the improvement in the health and condition of patients who have been under my treatment has in nearly every case been most apparent.

I will now treat of this subject as it bears on articulation.

We all have voice, or the power of producing sounds. Speech is altogether acquired, and more or less imitative. The child born deaf will

be always what we term dumb, simply because he cannot hear sounds, and thereby be able to imitate them, even though his organs of speech are perfect. Foreigners acquire the tone peculiar to their natural language, be it guttural, oral, or nasal, and we all know how difficult it is to alter an established habit or practice of speaking. Even in our own kingdom, how marked is the difference between the dialect of Englishmen, Scotchmen, and Irishmen; in fact, different parts of each country have their own peculiar brogue. To instance a case near at home, I may say, any one who has undertaken the task of trying to break a Cockney of the habit of murdering his H's, will have some idea of the difficulty to be encountered in teaching a patient to articulate when he has had a congenital fissure closed by an artificial appliance.

Habits acquired from birth are not to be got rid of, when the attempt is made in after-life, without much patient training. Besides, the instructor will find so much difference in the abilities of his patients, that certain words are mastered, or not well pronounced, and this when the physical defects are exactly similar. I find the best method to pursue at this point is to give patients certain sounds to imitate, and leave the effort and manner of imitating them almost entirely to themselves. If to produce some particular sounds, the attempt be laboured at for



days, or weeks, or months, we must not be discouraged, for the chances are they will be hit upon some day. And then how the patient mastered these turning-points, or why he was so long in mastering them, will probably for ever remain a mystery, both to himself and to his preceptor. Having, however, caught the correct sounds, and shown he has the power to make them correctly several times in succession, that difficulty is half over. But in cases where the faculties are not strong, these particular sounds must be kept up till they have become familiar to the patient's own ear, or he will undoubtedly lose them again, when, consequently, the preceptor's labours will have been comparatively lost.

Another great difficulty is to prevent the nasal sound from predominating. In language where the nasal sound predominates, the labour to the tutor would, I can imagine, be much lessened. Previous to the instrument being put into the mouth the patient, whenever he wished to produce a noise approaching to an oral sound, immediately brought the constrictor nasi muscles into play, in his attempt to close the nasal passages. Now this very motion is exactly what will produce nasal sounds when the instrument closes the cleft. My method for preventing this is, to place the patient before a looking-glass, telling him, when he is imitating certain sounds, he must not on any account curl up his nose. I

was induced to adopt this plan by noticing that, whenever I gave any of my patients an oral sound to imitate, it was preceded by their attempting to close the nasal passage in the manner described.

In certain cases, where the cleft is complicated with hare-lip, and more especially where part of the maxillary bone is deficient, and the arch is contracted in front—as in the case I have here to show this evening—of course this deformity, which cannot be rectified, renders the production of certain sounds very difficult. However, the improvement, even in his case, must be evident to all who heard him speak previously to the instrument being applied, though barely three months have expired, and I have no doubt he will continue to improve.

At the meeting of this Society in February last, many of you, gentlemen, had an opportunity of judging of this patient's powers of articulation previously to the instrument being applied. You again had an opportunity of seeing and hearing him in March, when the president encouragingly stated that certainly there was a great improvement in that short time.

In comparing this mechanical method of treatment with the surgical operation, I may say, first, in regard to the latter, that in applying the knife to a part of the human frame so important to its existence, and so frequently required for

use, as is the palate, it must be attended with great difficulty ; and very often much pain and suffering may have been endured without being followed by a suitable reward to the patient. But by this method, which is simply one of substituting by art that which Nature failed to give, there is neither pain nor suffering. Besides, in the former case—the surgical one—the operation being once performed, the patient has no alternative ; and should no improvement in articulation take place—which is more frequently the case than otherwise,—he has to go through life without any hope of intelligible communication by speech with his fellow-man. I have been given to understand, and from persons whose authority I should not doubt, that intelligible speech has been the result of surgical treatment ; but I may say that I have yet to see a case where, after the surgical operation has been performed, perfect articulation has followed. I may mention, too, that only last week a young lady was brought to me who had been operated upon seven years ago—and so far as the surgical operation was concerned, it had been most successful ; but in her case the improvement in articulation was not equal to what had taken place in a few weeks with a patient who had a similar fissure, but who was treated mechanically by myself. These small results, on the one hand, seem to me to arise from the unnatural tension

which exists in the soft palate subsequently to the surgical operation, such tension in most cases tending to paralyze the action of the muscles, thereby preventing the patient from having the power of closing the passage to the posterior nares; consequently, nasal sounds cannot be avoided. On the other hand, by the mechanical appliance, from its being flexible and easily controlled by the natural muscles (Fig. 2), which

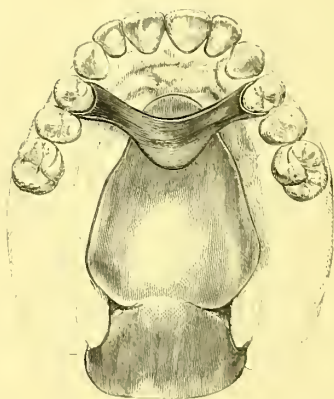


FIG. 2.—An Improved Velum in situ.

always have their full power of action from not having been severed by the knife of the surgical operator, the patient, with very little practice, can close the passages to the posterior nares sufficiently to enable him to give a purely oral sound when required.

If this instrument were not a comparative novelty to the profession in this country I would here stop. As, however, extraneous support from eminent men is always gratifying and valuable to an inventor or to an advocate of any similar cause, I will here trouble you with a passage from Mr. Pollock's remarks during the discussion which followed the reading of Dr. Kingsley's paper in November last. Mr. Pollock said:—

“As one who has taken some little interest in the question of congenital cleft palate, I consider it my duty to rise to pay my tribute of respect and admiration to Dr. Kingsley for the very eminently practical and ingenious apparatus which he has brought before us this evening. I look upon it as one of a series of those very great improvements that have come from the other side of the Atlantic, which have conferred so much benefit on mankind. I cannot but feel, from the experience I have had in the treatment of congenital cleft palate, that the operation for closing it by surgical means is not always a satisfactory operation.”

This opinion of Mr. Pollock's I cannot but highly appreciate, and I am pleased to add that I have heard similar expressions from many eminent surgeons. Professional men, however, who have hitherto looked upon these cases as the most delicate and difficult which they can

undertake—and especially as some among them have acquired considerable distinction for the success with which they have treated them by using the knife and the needle—may be expected to have, and freely excused for having, a considerable amount of prejudice against a method which to them appears so simple. But I may here appeal to practical dentists, by asking them, as skilled mechanics, if the *production* of these instruments be really so simple? And I feel sure they will say that, although the apparatus, when

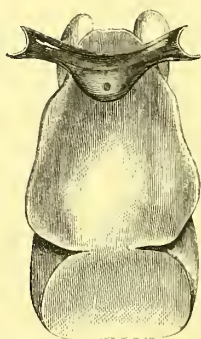


FIG. 3.



FIG. 4.

Fig. 3 represents the lower part of an Improved Velum.

Fig. 4 represents the upper surface.

perfected, is a very simple thing, the physiological and mechanical difficulties which have to be encountered and mastered in producing this little



instrument, make it a work which belongs to the highest order of dental art.

In conclusion, I hope I may be fairly allowed to assume that this instrument, as invented by Dr. Kingsley, and supplied by him in America and by myself in this country, has, in its present simplified and improved form (Figs. 3 and 4), much to recommend it to the notice of the profession. Here I again turn to Mr. Pollock for support. In November last he again said:—

“This apparatus of Dr. Kingsley’s seems, as far as possible, I think, to meet the general requirements of the soft as well as the hard palate. It has the capability of adapting itself to the movements of the soft palate, either of stretching out to the extreme that is required, or of contracting by folding over upon itself, and in this way I must say that I am rather inclined to give my verdict in favour of Dr. Kingsley’s apparatus for the treatment of congenital cleft palate.”

Having said this much, I will leave it to you, gentlemen, and a discerning public to decide on its merits. If it have the merits which have been awarded it in America, it will no doubt be appreciated in this country. Finally, believing all I have heard relative to its merits, and being in every way satisfied with the results of my own operations, I have, as a member of this Society, considered it to be my duty to bring it promi-

nently before you ; and I think the members of this Society will agree with me when I say, that they owe a debt of gratitude to Dr. Kingsley for having permitted me to come here before you in his name, as well as on my own responsibility, to thus explain his invention and our method of treatment.

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